

1 WHAT IS CLAIMED IS

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1. An image reading apparatus, comprising:  
photoelectrically converting means for  
photoelectrically converting image information  
obtained from optically reading an original image,  
10 line by line, and outputting an image signal, said  
photoelectrically converting means having optically  
shielding means provided at a portion thereof; and  
black shading correcting means for  
correcting the image signal using a black reference  
15 level, said black reference level being obtained from  
said portion of said photoelectrically converting  
means for each line during an operation of the reading  
of the original image,

wherein the black reference level used by  
20 said black shading correcting means for each line is  
obtained using black reference values, each of the  
black reference values being data of said portion of  
said photoelectrically converting means for a  
respective one of a plurality of lines.

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1           2. The image reading apparatus, as claimed  
in claim 1, wherein the black reference level is a  
weighted average of the black reference values.

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3. The image reading apparatus, as claimed  
in claim 2, wherein the black reference value for a  
10   respective line is an average of pixel values in a  
main scan direction, and the weighted average of the  
black reference value is obtained from weighted-  
averaging, in a sub-scan direction, the black  
reference values.

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4. The image reading apparatus, as claimed  
20   in claim 1, wherein the black reference level for each  
line is obtained from weighted-averaging the black  
reference value for the current line and the black  
reference level for the preceding line.

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5. The image reading apparatus, as claimed in claim 1, wherein the black reference level is a moving average of the black reference values.

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6. The image reading apparatus, as claimed in claim 5, wherein the black reference level for a respective line is an average of pixel values in a main scan direction, the moving average being obtained from moving-averaging, in a sub-scan direction, the black reference values.

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7. The image reading apparatus, as claimed in claim 1, wherein the black reference level for each line is obtained from moving-averaging the black reference values for the plurality of lines.

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1           8. The image reading apparatus, as claimed  
in claim 7, wherein the plurality of lines comprise  
the current line and preceding lines.

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9. An image reading apparatus, comprising:  
a photoelectric unit which photoelectrically  
10 converts image information obtained from optically  
reading an original image, line by line, and outputs  
an image signal, said photoelectric unit having an  
optically shielding member provided at a portion  
thereof; and

15           a black shading correcting unit which  
corrects the image signal using a black reference  
level, said black reference level being obtained from  
said portion of said photoelectric unit for each line  
during an operation of the reading of the original  
20 image,

wherein the black reference level is  
obtained using black reference values, each of the  
black reference values being data of said portion of  
said photoelectrically converting means for a  
25 respective one of the plurality of lines.

1           10. The image reading apparatus, as claimed  
in claim 9, wherein the black reference level is a  
weighted average of the black reference values.

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10           11. The image reading apparatus, as claimed  
in claim 10, wherein the black reference value for a  
respective line is an average of pixel values in a  
main scan direction, and the weighted average of the  
black reference values is obtained from weighted-  
averaging, in a sub-scan direction, the black  
reference values.

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20           12. The image reading apparatus, as claimed  
in claim 9, wherein the black reference level for each  
line is obtained from weighted-averaging the black  
reference value for the current line and the black  
reference level for the preceding line.

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1           13. The image reading apparatus, as claimed  
in claim 9, wherein the black reference level is a  
moving average of the black reference values.

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10           14. The image reading apparatus, as claimed  
in claim 13, wherein the black reference value for a  
respective line is an average of pixel values in a  
main scan direction, the moving average being obtained  
from moving-averaging, in a sub-scan direction, the  
black reference values.

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20           15. The image reading apparatus, as claimed  
in claim 9, wherein the black reference level for each  
line is obtained from moving-averaging the black  
reference values for the plurality of lines.

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